CLAIMS

What is claimed is:

5   1.   An array of at least 10 antibodies arranged in discrete areas of a solid support wherein each antibody is correlated to a polynucleotide sequence encoding the antigen to which the antibody is specific.

       2.   The array of claim 1, wherein the antibodies are comprised of monoclonal
10   antibodies.

       3.   The array of claim 1, wherein the antibodies are comprised of polyclonal antibodies.

15   4.   The array of claim 1, wherein the antibodies are a mixture of isotypes.

       5.   The array of claim 1, wherein the antibodies are comprised of murine polyclonal IgG antibodies obtained from DNA immunization..

20   6.   The array of claim 5, wherein the discrete areas of the solid support contain a component of murine sera.

       7.   The array of claim 1, wherein the at least 10 antibodies is a value between 100 and 10,000.

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       8.   The array of claim 1 further comprising a sample containing a protein derived from human cells reflecting disease.

       9.   A method to analyze gene expression comprising the steps of:
30   a)   creating an array of antibodies on a solid support;

b)   contacting the array with a sample containing gene expression products to the antibodies in the array, wherein the binding can be measured; and

c)   determining the gene sequence correlated to gene products bound to the antibodies.

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10.   The method of claim 9, wherein said gene products relate to a disease condition.

11.   The method of claim 10, wherein the condition is cancer.

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12.   The method of claim 9, wherein the sample is a human biological fluid.

13.   The method of claim 9, wherein the antibodies are comprised of polyclonal IgG resulting from DNA immunization.

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14.   A method of diagnosing a disease in an organism, comprising the steps of:

a)   producing antibodies by DNA immunization;

b)   creating an array of the antibodies on a solid support;

c)   contacting a sample with the array of antibodies wherein binding of the antibodies and antigen in the sample can be measured;

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d)   correlating the binding events to the disease.

15.   A device comprising an array of 10 reaction sites in a pre-selected pattern, wherein each reaction site contains an antibody correlated on a one-to-one basis with an isolated polynucleotide sequence encoding the protein to which the antibody is specific.

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16.   The device of claim 15wherein each reaction site is comprised of murine antibodies.

17.   The device of claim 15 wherein each reaction site is comprised of polyclonal antibodies.

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18.   The device of claim 15 wherein each reaction site is comprised of IgG antibodies.

19.   The composition of claim 15 wherein at least 10% of the reaction sites of the array is comprised of aliquots of homogenous antibodies.

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20.   The device of claim 15 wherein at least one reaction site contains a component of murine sera.

21.   A method to detect the gene product expression pattern of a disease comprising:

10   obtaining sample containing protein derived from each of normal and disease-

related cells, exposing each sample to an array of at least 10 antibodies wherein

the antibodies are correlated on a one-to-one basis to a specific gene sequence and

which bind to the expression product of the gene sequence,

detecting the expression of at least one gene sequence by the differential binding

15   of proteins in each sample to antibodies in the array.